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November 30, 2004

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APPLICATION NUMBER: 60/511,012
FILING DATE: October 14, 2003
RELATED PCT APPLICATION NUMBER: PCT/US04/34233

Certified by



Jon W Dudas

Acting Under Secretary of Commerce
for Intellectual Property
and Acting Director of the U.S.
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17698 U.S. PTO

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PTO/SB/16 (5-03)

Approved for use through 4/30/2003. OMB 0651-0032

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PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

INVENTOR(S)					
Given Name (first and middle (if any))		Family Name or Surname		Residence (City and either State or Foreign Country)	
Mani		Ayyakannu		Troy, Michigan	
<input type="checkbox"/> Additional inventors are being named on the _____ separately numbered sheets attached hereto					
TITLE OF THE INVENTION (280 characters max)					
EXTRUDED ALUMINUM PALLET					
Direct all correspondence to: CORRESPONDENCE ADDRESS					
<input type="checkbox"/> Customer Number		<input type="text"/>		<div>Place Customer Number Bar Code Label here</div>	
OR Type Customer Number here					
<input checked="" type="checkbox"/> Firm or Individual Name	John R. Benefiel				
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ENCLOSED APPLICATION PARTS (check all that apply)					
<input checked="" type="checkbox"/> Specification	Number of Pages	<input type="text" value="1"/>	<input type="checkbox"/> CD(s), Number	<input type="text"/>	
<input checked="" type="checkbox"/> Drawing(s)	Number of Sheets	<input type="text" value="5"/>	<input checked="" type="checkbox"/> Other (specify)	<input type="text"/>	
<input type="checkbox"/> Application Data Sheet	See 37 CFR 1.76				
METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT (check one)					
<input checked="" type="checkbox"/>	Applicant claims small entity status. See 37 CFR 1.27.				FILING FEE AMOUNT (\$)
<input checked="" type="checkbox"/>	A check or money order is enclosed to cover the filing fees				<div>\$80.00</div>
<input type="checkbox"/>	The Director is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number <input type="text"/>				
<input type="checkbox"/>	Payment by credit card. Form PTO-2038 is attached.				
The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.					
<input checked="" type="checkbox"/>	No.				
<input type="checkbox"/>	Yes, the name of the U.S. Government agency and the Government contract number are: _____				

Respectfully submitted,

SIGNATURE

TYPED or PRINTED NAME John R. Benefiel

TELEPHONE

(248) 644-1455

Date

10/14/03

REGISTRATION NO.

24,889

(if appropriate)

Docket Number:

IND-104

USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

This collection of information is required by 37 CFR 1.51. The information is used by the public to file (and by the PTO to process) a provisional application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the complete provisional application to the PTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop Provisional Application, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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P19SMALL/REV05

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of : Mani Ayyakannu
U.S. Serial No. : —
Filed On : October 14, 2003
For : EXTRUDED ALUMINUM PALLET

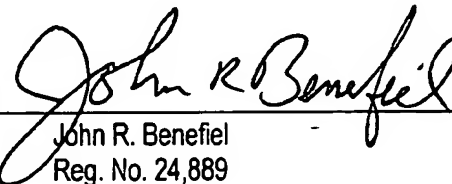
CERTIFICATE OF EXPRESS MAILING

Commissioner for Patents
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Sir:

I hereby certify that the accompanying provisional patent application, along with any items referred to as being attached or enclosed, is being deposited with the United States Postal Service, Express Mail Customer Receipt No. EL720605699US on October 14, 2003.

Date: October 14, 2003

By: 
John R. Benefiel
Reg. No. 24,889

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EXTRUDED ALUMINUM PALLET

The pallet is a structure used to transport a load of up to 2800 lb. The most commonly used pallets today are made of wood. Many wood pieces are nailed together to form the pallet. Wood pallets have many disadvantages including such factors as environmentally not friendly, water absorbent, damages easily by splintering, and also they are typically very heavy, etc. In the recent years, much focus has been given to plastic/composite pallets. However, most such pallets are not fire retardant and also not easily recyclable. Some pallets add fire retardants such as bromine which are not compatible with food cargo and also they are very expensive.

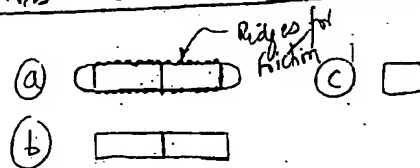
As a solution to the above, an extruded metal pallet has been designed. All the members and blocks (9 blocks in total) are profile extruded in various thicknesses and welded together by using a process such as pulsed MIG welding. The tubular members have ridges on the outside to provide anti-slip surfaces and ribs on the inside to reinforce the section as shown in Figure 1. The blocks are shown in Figures 2-4, and are welded perpendicular to the tubular members to allow maximum load carrying capacity.

The corner and midside blocks are provided with grooves to allow the edges of members to deflect and the "torque towers" to twist elastically during an "edge" impact and rebound, with minimal or no permanent set (Figure 5). The corners in the corner block can crush in a controlled manner during a corner impact. Also, the corners are rounded in the blocks to allow the fork truck tines to slip past without deforming or damaging the blocks.

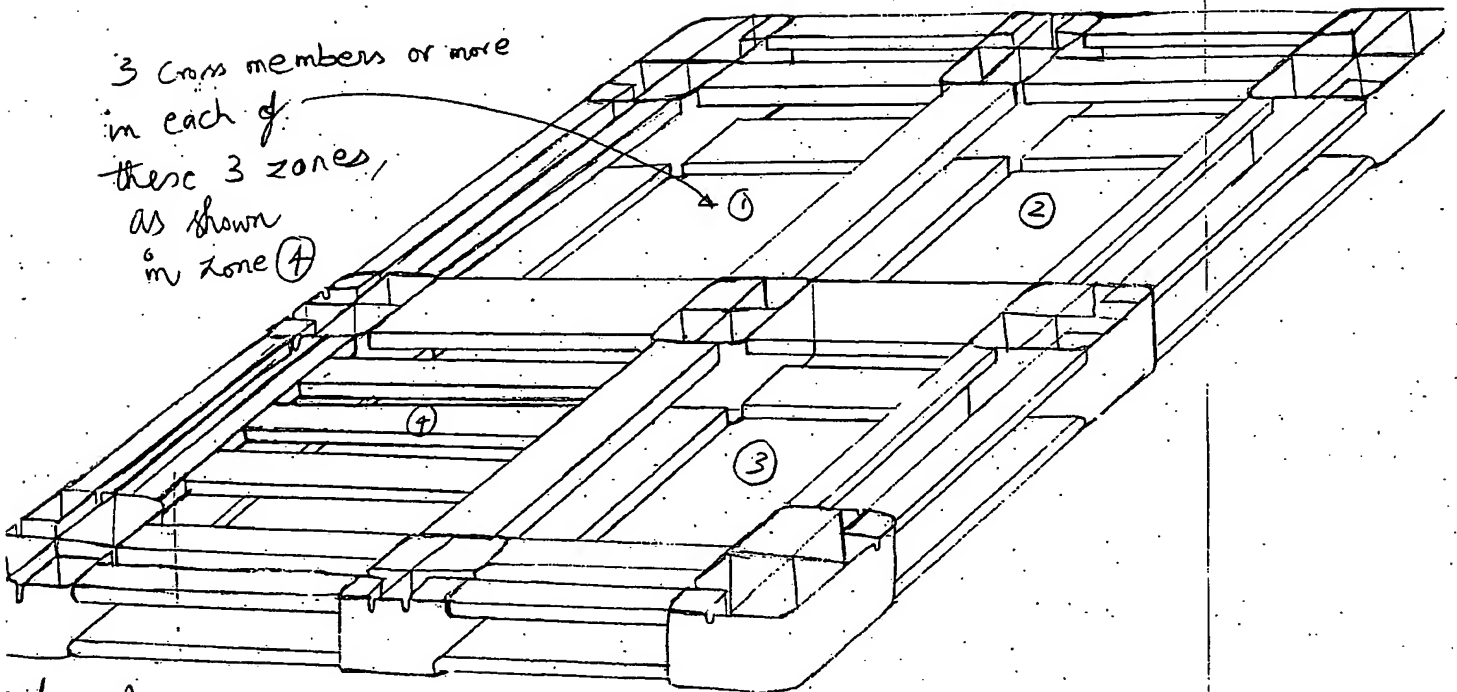
Extruded & Welded Pallet

Cross-Member Cross Section

1



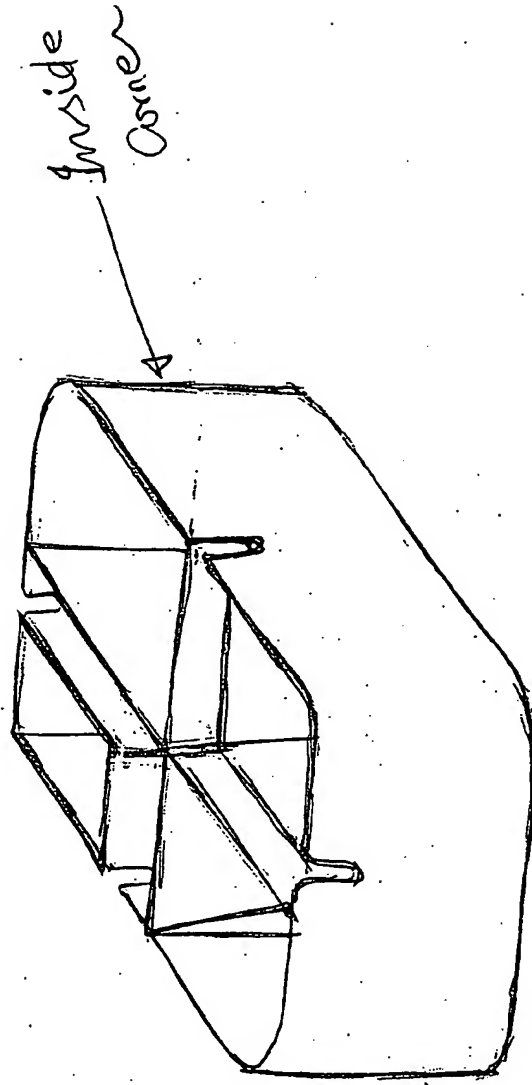
3 Cross members or more
in each of
these 3 zones,
as shown
in zone (4)



Yani Ayyakennu
Oct 10, 2003

Fig. 1

Corner Block



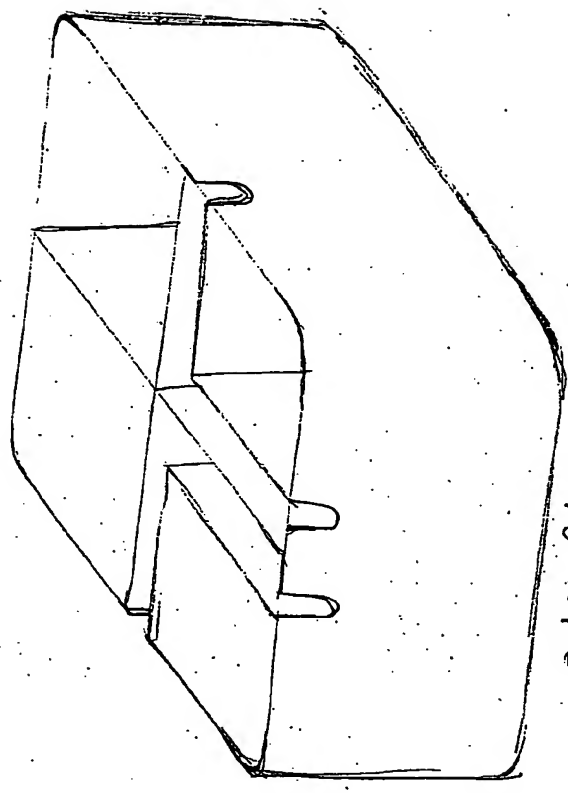
Outside Corner

Fig. 2

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Oct 10, 2003

3

Mid Side Block



Outer Edge

Fig. 3

Yan Pygamm
Oct 10, 2003

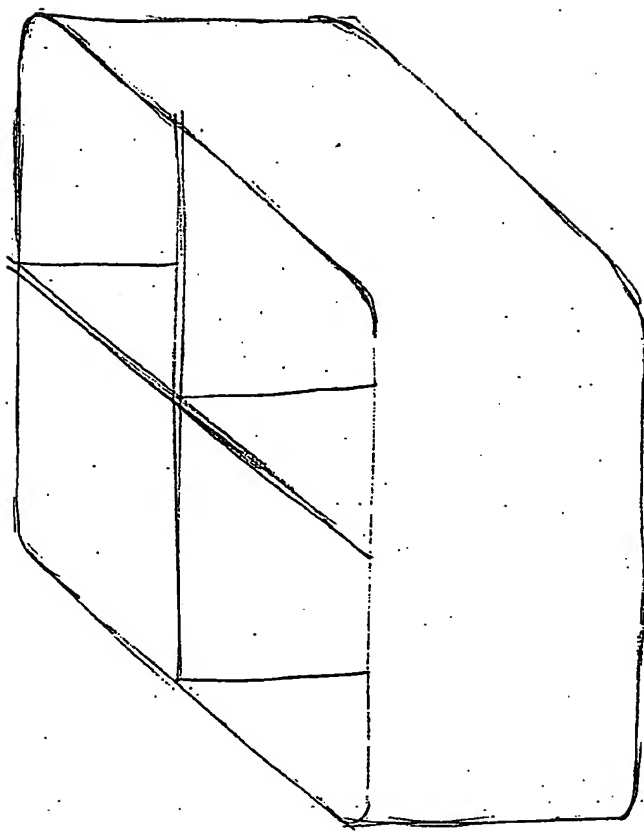
Center Block

Fig 14

Mani Ayakanna
Oct 10, 2003

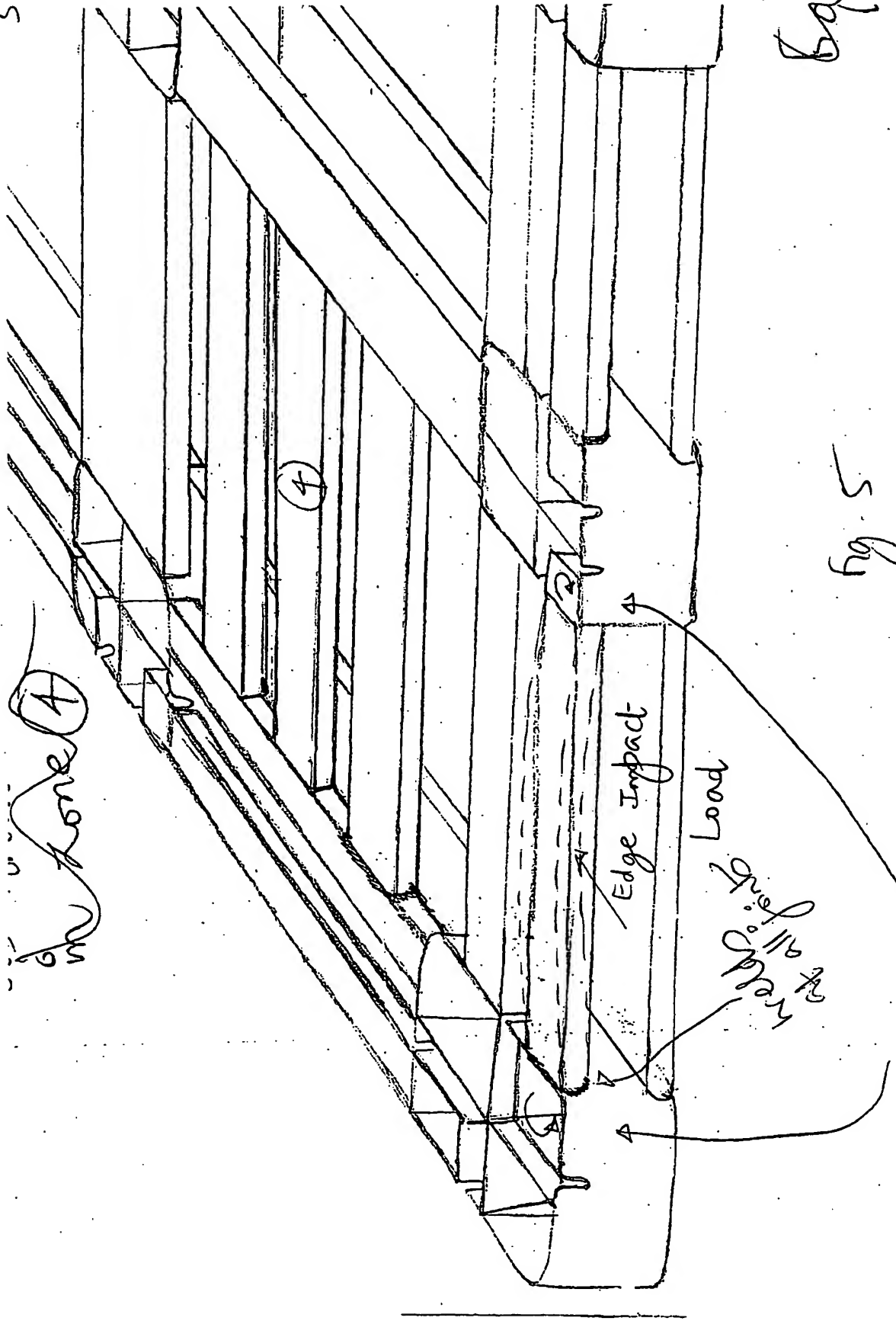


fig. 5

Bq

Mani Arjagannan
Oct 10, 2003

Torque Towers
(Twist about vertical
axis of towers)

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